

CHILD Profile PARENT SURVEY RESULTS YEAR 2000

August 2001

Submitted by:

Dahlia Kupfer
Principal Investigator
University of Washington/CHDD

I. Executive Summary

CHILD Profile is Washington State's health promotion system and immunization registry for children from birth to age six. The health promotion system focuses on giving parents the information they need to ensure children receive preventive health care. The health promotion system consists of age-specific materials sent statewide at specific intervals to parents of children birth to age six. The materials remind parents about needed immunizations and well-child visits for their children and contain information about parenting, child safety and health. The materials are sent statewide for parents of children born after July 1, 1998 and have been sent to all parents in King and Snohomish counties since January 1, 1993, to all parents in Island and Kittitas counties since Fall 1995, and to targeted populations in eleven other counties since January 1995.

The immunization registry is a tool for providers to look up a patient's immunization history, receive recommendations on a child's needed immunizations and record current immunizations. The registry is being implemented statewide.

The CHILD Profile evaluation team determined the need for regular evaluation of the health promotion materials to ensure the materials help meet the CHILD Profile goals. Specifically, a parent satisfaction survey was developed to address the following questions:

- Do parents receive and recognize the materials?
- Is the information useful, relevant and appropriate for all parents statewide?
- Are parents satisfied with the materials? If not, is there additional information that should be included?
- Are there specific materials that should no longer be included?
- Do the materials help serve to change health behaviors or knowledge?

The first series of parent satisfaction surveys were sent in 1996 (See CHILD Profile Parent Survey Results, 1998) to parents of children in specific groups and regions, based on implementation at that time. As a continuous quality improvement activity, the evaluation team determined that parents should be surveyed every two years to ensure satisfaction with the materials. Thus, in 1999, one year after the health promotion materials began statewide dissemination, the next series of parent satisfaction surveys were sent. Three sets of parent surveys were disseminated: The first, to parents of six month olds statewide (n=2,396); the second, to parents of two year olds in Island, King, Kittitas and Snohomish counties (n=1,768); and, the third, to parents of six year olds in King and Snohomish counties after they completed the program (n=1,216). The counties were chosen based on the date of implementation of the materials. After the first mailing was sent, a second mailing was sent to non-respondents and included a one dollar incentive to complete the survey.

The response rate varied by survey, from 44% for the six year survey to 50% for the two year surveys combined. The second mailing nearly doubled the entire response rate, which may have been the result of the one dollar incentive included in that mailing. The analysis demonstrated the following (results are also available stratified by county). The ranges listed below reflect percentages across all three survey age groups:

- *Recognizability:* Between 83% - 90% of all respondents read the letters they receive; an additional 6%-12% said they saved them to read later.
- *Growth chart receipt:* More than 80% of respondents said they received the growth chart. This percentage, which increased substantially from the 1996 surveys, is probably due to changing the dissemination process from birthing facilities to direct mailing. Of those receiving the growth chart, 35%-42% said they hung the chart; and 25%-31% said while they did not hang, they use it periodically.
- *Understandability:* Between 96%-98% said the information was easy to understand.

- *Usefulness:* More than 82% said the information was useful or very useful. Specifically, the letters and development chart were deemed the most useful. Of those who have received the letters for more than one child, between 87%-91% said they continued to find the materials useful. Of those who said the information was not useful, the majority said it was because they got the information elsewhere.
- *Duration of materials:* Most respondents said the materials should be sent until children reach at least age five. The percentage of respondents who wanted the materials until children were older increased by the age of their children.
- *Additional information to include:* Respondents wanted more information about growth, development and behavior.
- *Receiving information in alternate formats:* Between 15%-24% of all respondents would prefer receiving the information differently, usually citing email or the internet. The new CHILD Profile webpage now includes all the materials.
- *Behavior changes:* Between 61%-72% of all respondents said the immunization information helped them get their child immunized on time.
- *Knowledge changes:* Over 80% of all respondents said the materials answered questions they had about parenting, child health or safety.
- *Community-specific resources:* Between 52% - 67% would like more resource information about their community. There is currently analysis underway to determine the feasibility of providing community-specific information.

Analyses were also completed comparing the representativeness of respondents to non-respondents using survey data and birth certificate data. Similar to most mail surveys, respondents to this survey were more likely to be White, with higher education and income levels. Respondents also were more likely to have obtained prenatal care in the first month and were less likely to have used Medicaid as a source of payment for prenatal care or to have used other benefits (WIC, First Steps, AFDC or LHJ services) during pregnancy. Although respondents differed from non-respondents in some demographics and maternal behaviors, it is of course unknown whether non-respondents would have responded to survey questions differently.

Conclusion: Although it is difficult to attribute behavior changes to health promotion materials, it is possible to obtain information about self-reported behavior changes, satisfaction and use. Surveying users provides an excellent tool to determine satisfaction with health promotion materials. Feedback from parents also provide ways to ensure materials meet the needs of the intended populations and that the materials are relevant.

The majority of respondents in the CHILD Profile Parent survey found the materials useful and relevant and appear satisfied overall with the materials. Additionally, one may infer that the materials influence positive health behavior changes, based on the responses to the questions about the materials' impact both on reminding parents to get their children immunized and answering parenting, health or safety questions.

The results of this study will be used to examine future policy decisions and material changes. Issues include:

- Until what age should the materials continue?
- The cost-effectiveness of individual materials.
- Should the materials only be provided to first-time parents?

Moreover, the professional team who develop and revise the materials plan to examine the results and make some recommendations about changes to the materials as suggested in the surveys. Staff also plan to provide analyses to local health jurisdictions regarding the possibility of CHILD Profile mailing some community-specific information for LHJs if appropriate.

I. Introduction

CHILD Profile is the Washington State health promotion and immunization registry system designed to help ensure children receive the preventive health services they need. The health promotion system provides parents with age-specific information about immunizations, well child check-ups, growth, development and other parenting information. Statewide dissemination of the health promotion materials began on July 1, 1998 to parents of all children born after July 1. Materials are available in English and Spanish. Some materials are available in additional languages.

The CHILD Profile registry is built from electronic birth certificates filed with the Washington State Center for Health Statistics. Materials are then sent at age-specific times to approximately 95% of all children in Washington born since July 1, 1998. Children placed for adoption, born of very low birth weight (under 1500 grams) or who reside out of the state are given “no-mail” flags in the registry and are excluded from the mailings until the flag is removed. In King and Snohomish counties, materials have been sent to all children born since January 1993 and in Island and Kittitas counties since October and November 1995. In some counties, materials have also been sent to targeted populations since January 1995. Children born out of state and residing in Washington may receive the materials if their providers link with the registry or if parents call to request the materials. Children born in Oregon but residing in Washington also receive the materials through an agreement with their state Centers for Health Statistics (Idaho is in the process of initiating a similar agreement). Spanish language needs are identified by hospitals and providers, and by parents via the toll-free telephone line listed on each material.

The immunization registry allows a child’s provider to look up a child’s past immunization history to identify needed immunizations and record immunizations given. Providers who agree to participate are also able to add children to the system and update demographic information. The registry is in different phases of implementation across the state.

A survey of the CHILD Profile parent materials was initiated in Fall 1999 by the University of Washington, under contract with DOH. This survey was undertaken as a continuous quality improvement activity, as recommended by the CHILD Profile evaluation team. A previous parent satisfaction survey¹ was disseminated in 1996 in specific areas across the state. The survey was similar in content; however, the current survey aimed to answer a number of additional questions, both to help assist in development of materials and to address whether materials may help change behavior and/or serve as reminders for parents. Three different age groups (six months, two years, six years) were selected to evaluate satisfaction levels over time and the different materials sent to parents at their children’s different ages. These materials include:

Table 1: CHILD Profile Health Promotion Materials Evaluated

Material	When provided	Survey evaluated
Letters	Sent every two months for the first year, ...	Six months, Two years, Six years
Immunization fact sheet	Intro packet (birth)	Six months
Development chart (0-18 months)	Three months	Six months, Two years
Growth chart	Intro packet (birth)	Six months, Two years, Six years
Picture frame/magnet	One year	Two years, Six years

¹ CHILD Profile Parent Survey: Final Report. Washington State Department of Health. April 1998. Dahlia Kupfer et al.

Nutrition poster	18 months	Two years
Resource guide	9 months	Two years, Six years
Development chart (2-5 years)	Two years	Six years

Issues addressed in the surveys included:

- Are the materials relevant and appropriate for all intended populations?
- Are the materials useful, easy to read and understand?
- Do parents believe the materials help them remember to immunize their children on-time?
- Do the materials answer specific parenting questions?
- Do parents want to receive additional information or receive the information in a different format (e.g., county-specific information, information via the internet)?
- Are there certain types of information parents want to receive (e.g., more information about child's education or behavioral issues)?

Finally, respondents and non-respondents were compared to assess potential non-response bias, namely to look at how representative respondents were compared to non-respondents. Details of this analysis are included in Appendix 4.

II. Methodology:

The CHILD Profile parent survey was sent to three different populations and methodology varied somewhat by survey (see table below). The survey was designed to be self-administered by parents and was addressed to the parents of children listed in the registry, which is the way the materials are also addressed. Names and addresses were provided by the registry. Parents were assured of strict confidentiality and after the survey was returned, all identifying information was removed. Parents were asked to answer questions about overall satisfaction, usefulness of specific materials, whether the materials help them remember about immunizations needed, and other issues listed above. The surveys also requested that parents answer some demographic questions. An information sheet was translated into eleven languages and encouraged parents to call the toll-free Healthy Mothers Healthy Babies phone number to get the survey translated into their language.

The surveys were pilot tested with parents at Seattle area clinics both in English and Spanish. Survey methods and materials underwent human subject approval at the Washington State Department of Health.

Methodology differed slightly by survey due to the geographic areas where CHILD Profile had been implemented for the population we were surveying. The six month survey was sent statewide to all parents receiving the six month letter on one date (6/30/99). The two year survey was sent to all parents in two small counties (Island and Kittitas) receiving the two year letter during three specific time periods, and to all parents for one week each during those time periods in the two large counties (King and Snohomish) where the two year letter was disseminated. The six year survey was sent to all parents in King and Snohomish counties on one date (10/4/99).

Table 2: Parent Survey Implementation By Mailing – 1999

Child age	Area	Population*	# sent 1 st svy	Date sent	#sent 2 nd svy	Date 2 nd svy sent**	Date 3 rd svy sent
Six months	Statewide	All parents receiving 150-day letter	2396	6/30/99	1947	8/9/99	N/A
Two years	Island, Kittitas, King, Snohomish	All parents receiving 2-year letter	594 581 593	7/1/99 9/20/99 10/28/99	464 464 441	9/13/99 11/8/99 1/10/00	11/05/99 n =303
Six years	King, Snohomish	All parents receiving 6-year letter	1216	10/4/99	941	11/16/99	N/A
TOTAL			5380		4257		N/A

* During given time period

** One dollar incentive included

Survey populations were identified using the CHILD Profile registry, which contains demographic information on all children born in Washington State. The populations were chosen linked to one CHILD Profile mailing to establish recall of specific materials. Surveys were color-coded and numbered to provide each survey with a unique identifier to enable accurate follow-up. Various strategies to increase response rates were used, including a cover letter from the University of Washington, a return postage-paid envelope, a sheet translated into eleven languages, a toll-free telephone number to answer questions or translate the survey, and a one dollar incentive for those who didn't respond to the first survey mailing. These strategies have been shown to increase response rates and were used in the previous survey. The survey for parents of six month olds was the only survey translated into Spanish because these were the only group with Spanish language identified in the registry (note: hospitals with large Spanish-speaking populations began identifying Spanish language needs for parents of children born after July 1, 1998. Additionally, a postcard is now inserted in the three-month letter requesting parents to tell CHILD Profile if they want Spanish materials).

Access version 7 was used to maintain the demographic data for the survey and enter survey data responses. All surveys were given unique identifiers to enable follow up. Results were analyzed in SPSS for Windows v.10. and in EpiInfo. Ninety-five percent confidence intervals and P-values were calculated via EpiInfo.

Survey populations were selected in order to examine satisfaction, relevance and needs over three different populations, with different ages of children and in different geographic areas. The surveys were disseminated in areas where materials had been implemented over that time frame. See Table 1 for survey implementation. The following describes in detail the dissemination process. Each of the survey instruments was sent out to the populations indicated below. All name and address information was generated from the central registry by the CHILD Profile database administrator. Four weeks after the initial survey mailing, a second survey, postage-paid envelope, and cover letter were sent to non-respondents, along with a one dollar incentive to encourage response. A third mailing was attempted for one survey group to explore the effectiveness of a third mailing. Similar to the 1996 survey², it was determined that the third mailing without incentive increases the overall response rate by about 5%. This response rate increase shortens the confidence intervals by approximately .5%, which is negligible.

- 1) The first set, to parents of six month olds, was sent statewide to examine satisfaction across the state. The survey population included parents statewide who had received the six month mailing four weeks prior to

² CHILD Profile Parent Survey: Final Report. April 1998. Dahlia Kupfer et al.

the survey mailing. Demographic information was collected for one week (5/10/99) and sent to the first 2,400 records.

- 2) The second set was sent to parents who had received the two year mailing four weeks prior to the survey. Parents in Island, Kittitas, King and Snohomish counties were included. Names and addresses were provided over a three month time period. In King and Snohomish counties, demographics were collected once each month during a specific week (5/31/99, 8/9/99, 9/13/99). In Island and Kittitas counties, which have smaller birth cohorts, demographic information was collected once each month for the entire month (5/5-5/31/99, 7/19-8/9/99, 8/23-9/20/99).
- 3) The third set was for parents who received the six year letter (King, Snohomish) four weeks prior to the mailing. King and Snohomish counties are the two counties which have been receiving the materials since 1993. Names and addresses were collected over a one month period and sent on 10/04/99.

III. Results:

Survey results are compiled here for comparison purposes only and should be examined with caution. While the manner of dissemination was similar across surveys, populations and time frames were somewhat different. Unless otherwise noted, all results were statistically significant.

Response rates were similar across all regions as follows:

Child age	#sent	Response rate	#sent 2 nd round	Response rate 2 nd round	#sent 3 rd round*	Response rate 3 rd round	Total response rate
Six months	2396	19%	1947	33%	N/A	N/A	47%
Two years	594	20%	464	34%	303	12.1%	51%
Month 1							
Month 2	581	19%	464	34%	N/A	N/A	47%
Month 3	593	23%	441	36%	N/A	N/A	51%
Six years	1216	21%	941	30%	N/A	N/A	44%

*The survey was sent a third time to one survey population to determine the effectiveness of multiple dissemination. Examining confidence intervals showed that no significant decrease in confidence intervals would be established with the small overall increase in response rate; the third round was thus eliminated.

Results

1. Do you receive the CHILDP Profile letters?

Survey population	Yes	No	Don't know
6 month (n=1079)	92% (991)	7% (80)	1% (8)
2 year (n=856)	96% (824)	3% (29)	1% (2)
6 year (n=518)	98% (506)	2% (12)	-

Between 92%-98% said they receive the CHILDP Profile letters. The survey database was derived from the CHILDP Profile registry, with demographic information continually updated.

2. *What do you usually do with the letters you get?*

Survey population	Read them	Do not read them	Save to read later	Don't know
6 month (n=989)	83% (832)	3% (32)	12% (118)	1% (7)
2 year (n=826)	86% (711)	4% (36)	8% (68)	1% (11)
6 year (n=501)	90% (453)	3% (17)	6% (29)	-- (1)

More than 80% of respondents said they read the letters they get in the mail, while fewer than 5% said they do not read them.

3. *Did you get the growth chart for your child?*

Survey population	Yes	No	Don't know
6 month (n=987)	94% (929)	5% (47)	1% (11)
2 year (n=814)	80% (651)	16% (133)	4% (42)
6 year (n=502)	83% (417)	9% (46)	7% (37)

Eighty percent of respondents with two year olds and 83% of those with six year olds said they received the growth chart, while 94% of respondents with six month olds said they received the growth chart.

If so, what did you do with the growth chart?

Survey population	Hung it up	Threw it away	Did not hang, but look at	Other	Don't know
6 month (n=914)	42% (382)	8% (69)	31% (282)	16% (150)	3% (31)
2 year (n=655)	35% (226)	19% (127)	29% (187)	10% (65)	8% (50)
6 year (n=414)	40% (165)	17% (71)	25% (104)	7% (29)	11% (45)

Between 35% to 42% of all respondents said they hung the growth chart; an additional 25% to 31% said they did not hang but look at it sometimes. Respondents with two year olds or six year olds were twice as likely as those with six month olds to say they threw away the growth chart. Of those respondents to the six month survey who checked "other," 46% (n=72) said they would hang it up later when their child was older, 18% (n=28) said they put it away possibly for later use, and 14% (n=21) said they fill it out but do not hang it. For respondents to the two year survey, parent comments included that they would hang it later (11%), save possibly for later use (28%), or that they complete it but do not hang (8%). For the six year respondents, comments included that they would hang later (3%), save to possibly hang up later (38%), or complete but do not hang (7%).

In examining these results stratified by demographic factors, those with a twelfth grade education or less (52% compared to 31% for higher than twelfth grade) and those who earned less than \$35,000 (51% compared to 31% for those earning \$35,000 or more) were the most likely to hang the chart.

4. *How easy to understand is the information in the letters?*

Survey population	Very easy	Easy	Somewhat difficult	Very difficult	Don't know
6 month (n=989)	73% (723)	23% (232)	1% (9)	.2% (2)	2% (21)
2 year (n=823)	76% (624)	22% (178)	1% (6)	.1% (5)	2% (14)
6 year (n=504)	76% (385)	21% (108)	1% (5)	--	1% (6)

The reading level for the materials is fifth grade. Between 96% and 98% of all respondents said the materials were easy or very easy to understand. Eighty-four percent of those with graduate level education said the materials were very easy to understand compared to 61% of those with twelfth grade education or lower.

If you find the information difficult to understand, is it because?

Survey population	The materials are not in my language	The info doesn't make sense to me	Other	Don't know
6 month (n=18)	61% (11)	17% (3)	11% (2)	11% (2)
2 year (n=9)	67% (6)	11% (1)	11% (1)	11% (1)
6 year (n=5)	60% (3)	20% (1)	--	20% (1)

Of the 32 respondents who said the information was difficult to understand, most (more than 60%) said it was because the information was not in their language.

5. *How useful is the information?*

Survey population	Very useful	Useful	Not very useful	Not useful at all	Don't know
6 month (n=978)	29% (284)	58% (572)	9% (87)	1% (14)	2% (20)
2 year (n=818)	28% (231)	56% (455)	14% (111)	1% (7)	2% (14)
6 year (n=500)	28% (142)	54% (272)	15% (74)	1% (7)	1% (5)

More than 82% of all respondents said the information they received was useful or very useful to them. Marital status was the only difference observed when stratified by the survey demographic information. Those who were single were more likely to find the information very useful than those who were married (35% compared to 27%).

If the information is not useful, is it because?

Survey population	I get info elsewhere	I don't need it	I can't understand it	Other	Don't know
--------------------------	-----------------------------	------------------------	------------------------------	--------------	-------------------

6 month (n=113)	68% (77)	18% (20)	2% (2)	12% (14)	--
2 year (n=101)	79% (80)	12% (12)	--	19 (19)	--
6 year (n=85)	67% (57)	22% (19)	--	11% (9)	--

Of those who said the materials were not useful, the majority (more than 67%) said it was because they get their information elsewhere.

6. How useful do you think the following materials are?

Survey population	Material	V. useful	Useful	Not v. useful	Not useful at all	Don't know
6 month	Letters (n=974)	49% (474)	42% (409)	6% (56)	2% (24)	1% (11)
	Fact sheet (n=973)	41% (400)	45% (433)	8% (78)	3% (28)	3% (34)
	Devt chart (n=970)	51% (495)	39% (378)	5% (52)	1% (14)	3% (31)
	Growth chart (n=966)	30% (294)	47% (451)	12% (120)	5% (46)	5% (53)
2 year	Letters (n=804)	52% (420)	38% (303)	6% (49)	3% (25)	1% (7)
	Picture frame/magnet (n=799)	25% (200)	38% (302)	21% (170)	12% (94)	4% (33)
	Devt chart (n=796)	43% (339)	44% (349)	7% (58)	2% (12)	5% (38)
	Nutrition poster (n=792)	31% (246)	41% (328)	14% (113)	4% (33)	9% (71)
	Growth chart (n=782)	22% (174)	32% (250)	21% (165)	9% (69)	16% (124)
	Resource guide (n=793)	29% (233)	45% (353)	14% (110)	3% (25)	9% (71)
6 year	Letters (n=494)	49% (240)	40% (199)	8% (38)	3% (13)	1% (4)
	Picture frame/Magnet (n=482)	25% (121)	38% (181)	17% (84)	10% (50)	10% (46)
	Devt chart (n=485)	34% (165)	47% (226)	9% (46)	4% (19)	6% (29)
	Growth chart (n=481)	21% (100)	34% (165)	18% (88)	13% (62)	14 (66)
	Resource guide (n=484)	25% (123)	45% (217)	15% (75)	6% (28)	8% (41)

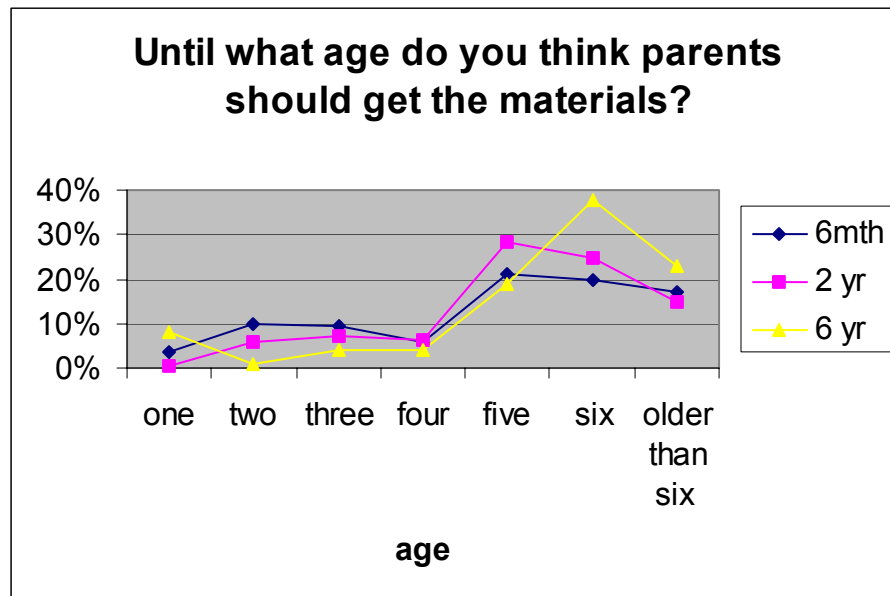
The letters, fact sheet, development charts were deemed useful or very useful by more than 81% (81%-91%) of all respondents. Respondents said the picture frame/magnet, nutrition poster, growth chart and resource guide were less useful (54%-74%). The usefulness of the growth chart appears to diminish over time.

7. Until what age do you think parents should receive the materials?

Survey population	One	Two	Three	four	Five	Six	Older than 6	Don't know
6 month (n=972)	4% (35)	10% (100)	10% (95)	6% (57)	21% (208)	20% (196)	17% (168)	12% (113)
2 year	1% (4)	7% (52)	8% (60)	7% (50)	29%	16%	15%	9% (71)

(n=800)					(235)	(205)	(123)	
6 year (n=493)	1% (4)	1% (5)	4% (20)	4% (21)	19% (96)	39% (193)	24% (116)	8% (38)

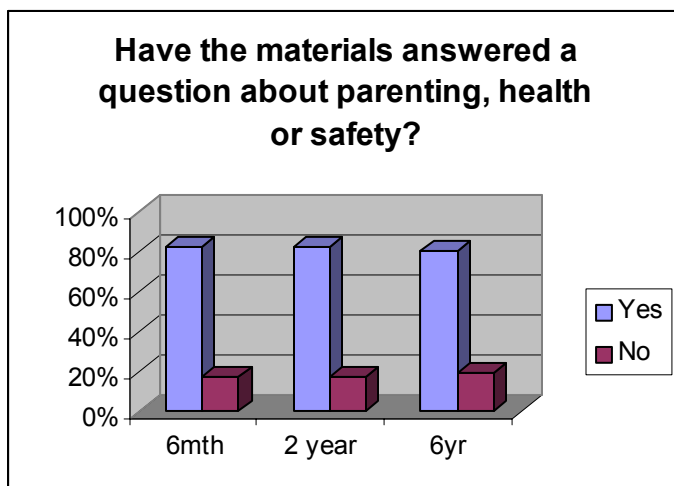
Respondents were more likely to want to receive the materials until their children were at least five. Fifty seven percent of respondents with six month olds, 60% of those two year olds and 82% of parents of six year olds said they wanted to receive the materials until their children were five or older.



8. *Have the materials answered any questions you've had about parenting, your child's health or safety?*

Survey population	Yes	No	Don't know
6 month (n=963)	83% (797)	17% (165)	(1)
2 year (n=812)	83% (671)	17% (140)	(1)
6 year (n=493)	81% (397)	19% (96)	--

Over 80% of all respondents said that the materials answered questions they had about parenting, child health or safety. There were no differences found in whether this was their first child receiving the materials. However, respondents who were single (89% vs. 79% for those who were married) or who had education levels 12th grade or lower (87% compared to 79% for those with higher than 12th grade) were more likely to answer that the materials answered questions for them. There were no differences when the results were stratified across all income levels, except those earning more than \$75,000 were less likely to say the materials answered these questions for them. This result was not statistically significant.



9. Do you think the materials should have included more of any of the following information?

<i>Survey population</i>	<i>Health</i>	<i>Nutrition</i>	<i>Growth/ devt</i>	<i>Behavior</i>	<i>Educa- tion</i>	<i>Safety</i>	<i>Other</i>	<i>Don't know</i>
6 month (n=781)	16% (121)	18% (137)	24% (188)	18% (131)	5% (35)	10% (79)	1% (8)	10% (78)
2 year (n=616)	12% (71)	10% (64)	21% (127)	29% (176)	8% (50)	6% (37)	1% (9)	13% (78)
6 year (n=377)	13% (48)	10% (38)	19% (72)	31% (115)	6% (23)	4% (15)	2% (6)	16% (59)

Respondents' answers as to whether the materials should include more of a specific type of information reflect the age of their child. Parent of six month olds were more concerned about growth and development, while parents of both two year olds and six year olds were most interested in more information on behavior. Please note that the above analysis illustrates only respondents' first choice, although they were asked to rank their top three priorities. Those who answered incorrectly (e.g., did not rank) were excluded from this analysis.

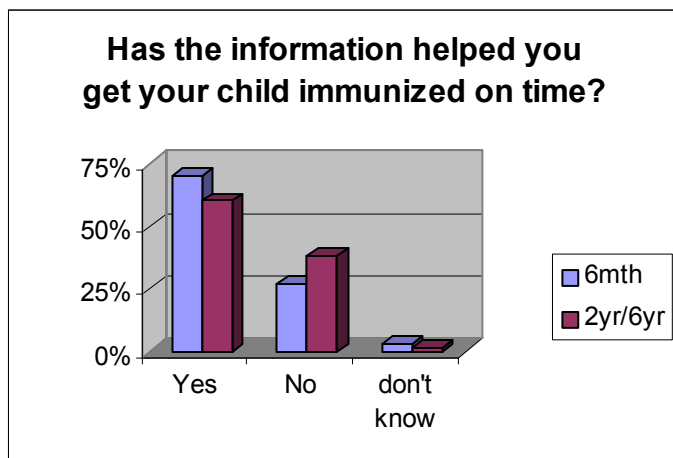
10. Would you prefer receiving the information in a different way?

<i>Survey population</i>	<i>Yes</i>	<i>No</i>	<i>Don't know</i>
6 month (n=973)	22% (216)	78% (757)	--
2 year (n=812)	24% (192)	76% (616)	--
6 year (n=497)	15% (75)	85% (422)	--

Between 15% and 24% of respondents were interested in receiving the information in a different way. Those in higher income levels (25% for those earning \$35,000 or more compared to 15% for those earning less than \$35,000 annually) and with higher education levels (23% of those with 12th grade education or higher compared to 9% for those with less than 12th grade education) were more likely to say they preferred receiving information in another format.

If so, how?

The majority who answered positively said they wanted the information through the internet or email.



11. Do you think the immunization information in the materials helps get your child immunized on time?

Survey population	Yes	No	Don't know
6 month (n=967)	72% (701)	28% (266)	--
2 year (n=815)	61% (499)	39% (316)	--
6 year (n=496)	62% (307)	38% (189)	--

More than 61% of all respondents said the immunization information in the materials helped them get their child immunized on time. There were no differences in whether this was their first child, but those with lower education (82% for those with less than 12th grade education compared to 69% with higher education levels) and lower income levels (77% for those earning less than \$25,000 annually compared to 63% for those earning \$75,000 or more per year) were more likely to say the information helped get their child immunized on time. Also, respondents who were single were more likely to answer yes to this question (84% versus 69%) There were no differences in stratifying this question by whether respondents thought the information was useful and understandable.

12. Would you want CHILD Profile to send you more information about resources in your community?

Survey population	Yes	No	Don't know
6 month (n=963)	60% (582)	40% (381)	--
2 year (n=805)	67% (536)	33% (269)	--
6 year (n=489)	52% (256)	48% (233)	--

Between 52% and 67% of all respondents said they would like more information specific to their community. In stratifying by demographic information, respondents with fewer children, who were single, with lower education and/or income levels were more likely to want more community-specific information.

13. Have any other children in your household received the letters?

Survey population	Yes	No	Don't know
6 month (n=966)	23% (220)	77% (745)	-- (1)
2 year (n=808)	41% (335)	59% (473)	--
6 year (n=495)	46% (228)	54% (267)	--

If yes, have you found the letters useful?

Survey population	Yes	No	Don't know
6 month (n=222)	91% (202)	9% (20)	-- (1)
2 year (n=312)	91% (284)	9% (48)	--
6 year (n=230)	87% (201)	13% (29)	--

Most respondents (87% - 91%) who received the materials for previous children said they continue to find the materials useful. When the results were stratified by demographic information, there were no differences observed in the usefulness.

Demographics

How many people live in your household?

Survey population	2 persons	3 persons	4 persons	5 persons	6 persons	More than 6	Didn't answer
6 month (n=995)	3% (28)	40% (398)	31% (305)	15% (147)	6% (55)	4% (37)	3% (25)
2 year (n=827)	3% (26)	31% (260)	39% (325)	16% (133)	5% (44)	3% (22)	2% (17)
6 year (n=511)	4% (21)	19% (95)	42% (215)	21% (106)	8% (39)	4% (21)	3% (14)

How old are you?

Survey population	16-19	20-24	25-29	30-34	35-39	40-44	45+
6 month (n=962)	5% (49)	14% (133)	22% (215)	26% (250)	17% (164)	5% (49)	1% (11)
2 year (n=794)	1% (7)	8% (65)	20% (157)	36% (283)	25% (202)	8% (67)	2% (13)
6 year (n=483)	--	2% (9)	9% (42)	19% (94)	37% (177)	26% (126)	7% (35)

Are you the child's mother? Father? Other?

Survey population	Mother	Father	Other
6 month (n=976)	94% (916)	5% (49)	1% (11)
2 year (n=810)	90% (728)	9% (72)	1% (10)
6 year (n=498)	91% (453)	8% (41)	1% (4)

The majority of survey respondents were the child's mother.

What is your marital status?

Survey population	Single	Married	Don't know
6 month (n=976)	18% (176)	80% (800)	--
2 year (n=810)	9% (76)	91% (734)	--
6 year (n=498)	13% (67)	84% (431)	--

Most (80%-94%) respondents were married.

What is the highest school grade you completed?

Survey population	8th grade or less	9th-11th grade	12th grade	Some college or tech schl	College degree	Graduate school degree
6 month (n=972)	1% (11)	6% (54)	19% (185)	33% (318)	31% (303)	10% (101)
2 year (n=808)	1% (5)	2% (15)	11% (92)	31% (249)	39% (316)	16% (131)
6 year (n=498)	--	2% (8)	13% (66)	28% (141)	43% (215)	14% (68)

When asked about their education, approximately 30% of all respondents said they had some college or technical school and 31% - 43% said they had obtained a college degree.

Which best describes your race/ethnicity?

Survey population	White	Asian/ Asian Amer	Native Amer	Black/ African Amer	Hispanic/ Latino	Multi- ethnic	Other
6 month (n=963)	78% (749)	8% (76)	1% (12)	2% (17)	6% (55)	4% (41)	1% (13)
2 year (n=803)	79% (633)	10% (78)	1% (4)	3% (24)	3% (27)	3% (29)	1% (9)
6 year (n=491)	83% (409)	8% (41)	.2% (1)	3% (13)	2% (10)	2% (11)	1% (6)

Approximately 80% of all those responding to the question of race and ethnicity said they were White.

Are you currently employed?

Survey population	Yes	No	Don't know
6 month (n=980)	50% (490)	50% (490)	--
2 year (n=809)	60% (484)	40% (325)	--
6 year (n=497)	68% (336)	32% (161)	--

Between 50% to 68% of all respondents said they were employed.

What is the combined annual income of your household?

Survey population	<\$15,000	\$15,000- 24,999	\$25,000- 34,999	\$35,000- 49,999	\$50,000- 74,999	\$75,000- 99,999	>\$100,000
--------------------------	---------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	----------------------

6 mth (n=899)	12% (107)	14% (122)	15% (132)	22% (195)	23% (210)	8% (71)	7% (62)
2 year (n=740)	5% (34)	7% (53)	10% (72)	17% (127)	30% (223)	17% (125)	14% (106)
6 year (n=447)	4% (18)	4% (20)	7% (33)	16% (71)	33% (148)	18% (81)	17% (76)

IV. Discussion:

The surveys were sent to different populations in different geographic regions. Respondents to the two year and six year surveys were not from across the State (due to implementation times) and therefore, there may be a geographic bias in the results. However, the results were extremely similar for each age group. Thus, the analyses were illustrated here together. The findings presented suggest the following:

- Growth chart receipt and usefulness:* A higher percentage of respondents with six month olds said they received the growth chart, even though every parent receiving the materials should also receive the growth chart when their child is four to six weeks old. It should be noted that growth chart dissemination, previously given at the birthing hospital at time of birth, was revised to be disseminated with the first mailing to parent homes on July 1, 1998. (The dissemination process was changed because some parents were not receiving their growth charts in the hospitals, and it was less expensive to mail to parents directly.) This may have resulted in fewer parents with older children having said they received their growth chart. Additionally, the growth chart was deemed less useful than some of the other CHILD Profile materials. This supports anecdotal evidence that parents may not remember receiving the growth chart when it is given at birth and that the growth chart may not be useful until their children are older. Staff are currently analyzing the growth chart and its dissemination process to consider alternatives.
- Usefulness of materials:* The letters, fact sheet and development chart were shown to be useful by most respondents. However, respondents said other materials were less useful. This may be for a number of reasons: 1) Some materials provided are not ‘useful’ per se, but may help create buy-in to the program so parents read the other materials. 2) Some materials, like the growth chart, may be provided at inappropriate times for the age of their child so the materials may get lost or not used. 3) The resource guide is only provided with statewide information, except in King and Snohomish counties, where these LHJs fund the dissemination of county-specific information. The statewide resource guide was evaluated in the four county area which had received it at the time of the survey. There was a higher percentage of respondents who said the guide was not useful at all in Island and Kittitas counties (who only receive the statewide version) than in King and Snohomish counties.
- Duration of the materials:* Respondents very clearly stated their preferences to receive the materials until their children were at least five years old. Not surprisingly because the materials end at age six, respondents with six year old children had the greatest percentage requesting that the materials continue to age six and older.
- Knowledge and behavior changes:* Whether health education materials change behavior is a frequent question asked about all health promotional materials. While it is extremely difficult to provide scientific evidence that reading information leads to a distinct behavior change, one can ask where respondents learned about various health practices to determine possibilities of where the behavior change was based. When we asked whether the materials answered any questions respondents had about parenting, their child’s health or safety, over 80% (from 81% - 83%) responded affirmatively. Additionally, more than 60% of all respondents said the immunization information helps them remember to immunize their children on time; predictably, the percentage is higher (72%) for parents of six month olds who have a

large amount of health information to remember and many more shots for their children during the first year of their lives. Additionally, immunizations are a major focus of the materials during this stage.

- *Community-specific resources:* Several communities across the state have inquired whether CHILD Profile would be willing to provide information specific to their community (i.e., mailed only to their region). Between one-half and two-thirds of all respondents requested community-specific information. There are plans to analyze and pilot various options for community-specific information requests.
- *Additional children receiving materials:* There has been discussion about whether the materials are appropriate and necessary for families who have received CHILD Profile materials for more than one child. Most respondents (87%-91%) who received the materials for previous children said they still find the materials useful. In additional qualitative analyses, respondents commented that the concise nature of the materials was particularly helpful as reminders for parents who have received the materials for other children.
- *Understandability of materials:* Although all materials are written at the fifth grade level, those with higher education levels were more likely than those with lower education to say the materials were easy to understand.

Comparison Between Respondents And Non-Respondents Using Birth Certificate Data: Because of the difficulty in obtaining a high survey response rate, we wanted to analyze whether there were differences that may have led to non-response bias. Comparisons between respondents and non-respondents were completed using birth certificate data (see Appendix 4 for complete results) provided by the Washington State Center for Health Statistics. As previous studies have shown, respondents to this survey were more likely to be White, with higher education and income levels. Regarding behaviors during pregnancy, respondents were more likely to have obtained prenatal care in the first month. Respondents were also less likely to have used Medicaid as a source of payment for prenatal care and were less likely to have used other benefits (WIC, First Steps, AFDC or LHJ services) during pregnancy. While respondents differed from non-respondents in some demographics and maternal behaviors, it is unclear whether non-respondents would have responded to survey questions differently.

V. Conclusion/Future study:

It is critical to evaluate the CHILD Profile health promotion materials to ensure parents are satisfied with the materials, find them useful, and are able to use the information. The CHILD Profile parent surveys showed overall satisfaction with the CHILD Profile health promotion materials. Moreover, the majority of respondents said the materials answered parenting, health or safety questions they had and helped them get their child immunized on time.

In the 1996 survey, parents of younger children were surveyed with the intent to survey older children once sufficient numbers of parents of children aged two and older were in the registry statewide. This was particularly important in order to examine satisfaction over time because parent opinion of the materials may change over time. Moreover, it has been conjectured that the materials may be less useful for parents of older children and parents who have received the materials for other children. The results included here replicate results from the 1996 results. However, it continues to be important to assess parent satisfaction over time.

The survey results may also provide information for policy decisions about the materials, their content and dissemination process. Some of the issues requiring further analysis include:

- 1) **Should the materials continue beyond age six?** The age chosen at CHILD Profile's inception was based on the need for parenting information until school age. Anecdotal evidence and these survey results indicate that parents may be interested in the materials until later ages.
- 2) **Should the materials only be offered to first-time parents?** As a cost-saving measure, some argue that the materials should only be provided to first-time parents. This survey substantiates the belief that the materials are appropriate for parents with more than one child or who have received the materials previously.
- 3) **The cost-effectiveness of individual materials:** Additional studies are being undertaken about the cost effectiveness of individual materials cited in this survey as being less useful to respondents.
- 4) **Should county-specific materials be disseminated regionally?** Respondents said they would prefer more county-specific resource information. Analysis is underway to evaluate the cost and support for these additional materials.
- 5) **Should the materials be made available in alternate formats?** Between 15%-24% said they would prefer obtaining the materials through a different format; in most cases the Internet or email were cited. The materials are now available on the CHILD Profile webpage. Other formats may also be explored.

The CHILD Profile Parent Survey is a continuous quality improvement activity, to be conducted every two years. The survey results help provide CHILD Profile with necessary information about parent satisfaction and with information about the effectiveness of the materials.

APPENDIX 1

Survey comments: The following are some of the survey comments received. About 35% of all respondents provided comments.

6 month comments

The letters are very useful, in fact they have reminded me of things I needed to do, like checkups.
I absolutely love the growth wall chart! I could use a few more for my other kids, plus the one we have is getting old because the kids love it too. Thank you for all your help!
Thank you so much for providing Child Profile to new mothers like myself. I have found the info extremely useful & informative. I esp. appreciate receiving the letters on the month as my daughter reaches her monthly milestones. I can use the info in each as a guide and it allows me to anticipate changes in my baby. Please keep up the great work of educating parents!!
Your Child Profile letters are written so they are very easy to understand. Thanks! We love the growth chart it's amazing how fast our little boy has grown!
You're very helpful - I appreciate the time and effort you put forth to help us parents. You're great.
Although much of the information is not new to me, it provides reminders and an assurance of up to date information.
CHILD Profile is very helpful and a good reminder of many different things. I put it on my refrigerator for all to read and highlight parts which are important to all like "Wash your hands" before holding baby (little hints do help.)
I thank you for having this program Child Profile it has help me understand more about the development of my children. Thank you and keep up the good work. Everybody there you're doing great. Bless you all.
I appreciate all the free information I can get on parenting. Even if it's info that I already know, I still like to read about it. I don't think there is such a thing as too much information when it comes to helping you raise a child. I keep all my papers and pamphlets in organized, labeled folder. That way, if I have a question, I don't always have to call my mom, I can look it up instead. Thank you.
I think this Child Profile program is excellent. I'm certain that it helps new moms particularly those who may be less educated about childcare. This program is a definite benefit to the community. Thank you!
Please continue sending us literature on health, nutrition, growth, etc. on our children so we can continue to take good care and to always know we are doing our best! Thanks!
As a speech-language pathologist involved with early information, I have all this info & feel fairly well informed. I also think the news letters are very informative and serve as a good reminder about upcoming developments, etc. I am so happy to see this news letter going to families in the area. A big part of my job is parent education and assessment of infants and young children and these newsletters should, hopefully, make parent more informed.
I liked getting the info letters in the mail. I could share them with auntie and grandma and grandpa too. Things have changed a lot since I was a baby and sometimes having a third party discuss important issues is very helpful and better for my baby. Safer too! Thanks
I have appreciated the info. There was much I did know, however I still appreciated the reminder. It's a great source of info especially for first time mothers and those women and men that are not familiar with developmental milestones, feeding habits, and nutritional needs for the child, etc. I hope this will be something that will cont. to be used. It's also my hope that mothers having difficulty reading the info will get it via a social worker or nutritionist at the WIC offices, ped., etc.
Please send more often.
Thanks for sending the info! It does make a difference!
The letters served as an excellent "reminder" of where my baby should be developmentally and what/how I should and can interact with my child. My pediatrician has me and my child on a schedule for office visits and vaccines, so I didn't rely on your information for this so much. I also appreciated info on safety- your letters clarify a lot of confusing and conflicting information I've received.
I elected to stay at home with my son. We lost an income; therefore, I would like to know more about community services. Almost all of what you say in your newsletters reinforce with I already know, which is beneficial for many reasons. I look forward to receiving your newsletters.
I would like to let you know that I really enjoy getting all of the information you send to me. It really helps me out.

If you have any extra information to send me on any subject, I would appreciate it. For example if you have any information for young single mothers taking care of toddlers-preschoolers. Thank you.

The information that I receive from Child Profile is very helpful to me and my family. I not only share it with my family but I share it with friends also. So thanks so much if we can help in any way at all please feel free to ask or write to us.

I do find the Child Profile letters very helpful and useful. Qaden being my first child, the information in the letters and advice from friends has helped me raise a very happy healthy smiley boy! Please continue the great work! First time parents is hard enough, not knowing if what you are doing in raising your child is right or wrong. The Child Profile letters are like our guidance! Thank you!

...After all it is for the child's sake. It is better to have more than not enough info.

I think this is a wonderful service and any less than positive comments among my responses can be attributed to the fact that I get most of my information from parenting books and magazines and from my doctor. I think it is probably more useful to younger mothers and those without higher education. It's always nice to have a reminder though, of developmental milestones we'll be facing and medical attention our children should receive. Thank you.

I find the Profile letters very helpful. I only wish letters such as these were available when my older kids were little. My older son (12 yrs. Old) didn't develop like other kids did. I really couldn't tell at the time. If profile letters were available, I could have obtained help for him sooner. He's now mentally and physically delayed and its very hard on our family.

I appreciate the letters. They're short, to the point and clear. I like to have a quick summary of relevant information as the kids grow.

Even though this was my third child, I still appreciated the reminders about certain things. (milestones, etc.) It's good to be reminded about what to expect at approximately what age. Even my 9 year old liked to look at the chart of a baby's development up to age 2 to see what to expect. I have agreed with every bit of advice on parenting/behavior for small children. I really like to see that information coming home because new parents do not always know what age-appropriate expectations are (e.g.. When to start setting limits, baby-proofing, etc.)

Thank you for your efforts! I'm sorry I've been throwing away the information. Here's your dollar back and I promise to start reading the material. Any information on my child is worth my time.

Thank you for your growth chart. It has been exceptionally helpful as a reminder to immunize my children on time.

Child Profile letters are really very useful and it helps me a lot as a new mom to learn/understand my baby as she grows. Thanks so much.

I have enjoyed receiving the letters and reminders. Brooke is my first baby so the information I received from you really helped me to make educated decision. Now Brooke is a healthy 6 month old with all her shots. Thank you for all the information.

Being a first time mom with no family in the area, books, letters, internet have been a life saver! Child Profile has helped me know that we are on the right track. I think there are many people that benefit from this. It would have been nice to know that this was coming. It would have relieved a lot of anxiety I was feeling in the hospital. I thought "how am I going to remember all of this?" Thanks for the great information!

I have really enjoyed receiving the Child Profile pamphlets. I read them over and over. You would think that by our fourth child we should know it all but Child Profile has taught me lots and also reminded me of things I had forgotten. I look forward to receiving them. Thank you.

I find the Profile letters useful because if is a reminder of how I ought to do things; safety, play times, nutrition, etc. Life can get very busy and I like to be reminded what the highest priority is each day, my kids. I also appreciate information on how to get questions answered (or any help I may need)...

Thank you. I find the mailings to be a great reminder for well-baby checks and questions for the doctor, as well as , comforting source that informs me that my children are developing well

I feel that you guys take off a lot of strain. With all of the hard work we find ourselves doing taking our child places and appointments. We find ourselves overwhelmed, and your reminders and suggestions make it easier.

Thanks for your information. We will soon be moving out of state and I hope we are able to return to Washington because they do such a good job offering services for their children.

Two year comments:

I really like the colorful stickers and growth chart. I'm keeping these as a keepsake of my son's growth during his early years. Also, I've learned a lot from the newsletters. One time I found information about a car seat safety hotline and this helped me tremendously. I knew my son was too big for his car seat, but he wasn't ready for a forward facing seat. The hotline helped me locate a car seat that works for him. Thank you so much for that information! I was especially pleased because two months later we had a car accident and my son was just fine! He may not have done so well if we didn't have the proper car seat.

I have looked forward to receiving the letters. Even though I have three other children, it was reassuring to receive materials about development and immunizations. I seemed to have forgotten a lot of the developmental information that I learned during the other kids early years.

It's my first time being a mom. I did not know how to take care of my baby when she was born and how to raise her. Child Profile letters helped me a lot. I really appreciate your help. Some of the letters from your office I am still keeping. I think sometime I might need that information, or even think that may also be useful for another one I'm trying to have. I hope you can continue to provide some service focused on child education information. For example, I raise my daughter at home...We were not raised in this country, don't know the education system and schedule. If you can provide some info about the ages to go to preschool, that would help us more. We try to be good parents and make a successful human being. We need your support. Thank you.

I've truly appreciated the immunization information because it's hard to remember such vital information with so much else to remember as a parent. I would like continued information on menu ideas and growth and development.

It has been very helpful receiving the CHILD Profile. It has reminded me of doctors appointments, immunizations and basic safety concerns. I have an older child and it is amazing what you tend to forget with the second child. The letters are invaluable ...We share the letter with grandparents who are very active in the children's lives so they can be up to date on safety concerns and peg where children should be in their development stage.

I think the Child Profile newsletters are especially valuable for families who don't have regular access to medical care for their children. They serve an invaluable purpose...and they have reminded me to call my doctor for immunizations for my youngest two children. Thank you for providing a very valuable and possibly life-saving resource

You guys provide an excellent newsletter. I always have time to look over your info.

CHILD Profile has been extremely useful. When I was a first time mom of twins, the letters helped me know what developmental stages our boys should be at. Now with our daughter, I still use them (however, I don't receive them as often) and this has helped me. I would like to see more info on early childhood illnesses. One of my twins almost passed away in April from meningitis and we had no previous knowledge of it at all. When they turned two they both were immunized against this.

This is a great publication! Lots of help!

I think that your program is great! It is a nice reminder to me of what my children should be doing at each stage.

I think CHILD Profile is a wonderful service and resource! Especially for busy parents who may not have the time or interest to learn and research themselves. I read a lot and am very involved in my child's health and welfare. I don't think you could stress enough the importance of car safety, respecting your children, stimulating all the senses, reading to them, and not putting them down or labeling them. Thanks for teaching and sharing information! Keep up the good work!

I enjoy the CHILD Profile letters. You do a great job on covering everything. What a great idea!

6 year comments:

The letters you sent to my daughter were very helpful. She was the last of four children. I have to thank you because they helped me remember her immunizations. Not that I would forget entirely, but they helped me make an appointment in advance. I have four children, and with schools, sports, parties, etc., I loved reading that she was right on schedule. I think it would be very reassuring for first time parents to receive these letters.

I have appreciated receiving monthly mailings. They've come when least expected and most needed. My children are spaced far enough apart that I've forgotten things, time lines, etc. CHILD Profile helped to jog my memory or gave me revised information. Things seem to change a lot in five or six years. I've saved all the mailers and sheets provided at yearly checkups, it's great to have to look back on. I'm a new mom again after six years, and I'm looking forward to receiving the information again. I would find it helpful if you provided a binder to keep the mailers in! Thanks.

I really enjoyed them! They were just the right length because I could read them easily right when they came in the mail. If it were longer, I may have put it aside and forgot to read it or misplaced it. I enjoyed comparing my child's progress with the "norm" for that age. They helped me remember the shots/immunizations and correct time for them, and also reminded me to enjoy the age my child was at the time, and not to try to push them to a stage they were not yet ready for.

These letters become very useful to me as I faced single parenting and an unfortunate lack of cooperation and information sharing from the kid's mother. These mailing's filled in many blanks in my knowledge. This is a very valuable service/resource. Thank you!

The letter is an excellent reward for parents to see how their child is performing, and where they might need to focus more attention. I'm disappointed that I won't be getting them anymore. They were a symbol that my society cared about supporting my parenting. Thank you for the years of confirmation.

I enjoyed the CHILD Profile letters because they acted as a check and balance system for my babies' diets, immunization schedules, and development. And frankly, when there were a few years in between births, the CHILD Profile letters were a nice little refresher course! Thank you!

I still use the growth charts for both children, and write all their checkup information on it (immunizations, height, weight, etc.). I found the development charts very helpful, and I still use, or refer to, the two to five year chart for my second child. My children also love looking at their growth charts on the wall to see how they've grown.

I enjoyed receiving the CHILD Profile letters. I was wary at first about your program being linked to a marketing firm, but was pleased to see that there was no strings attached.

I think the CHILD Profile letters are great! Even though I am experienced with four children, it still is nice to be reminded about important information. I always read and appreciate each one. Thanks!

I enjoyed receiving the CHILD Profile letters. I found them informative. Even when I thought I knew what to do, it was nice to read a reliable source that confirmed what I thought I knew. I think it would be helpful to continue receiving some information, even if it was every two years, especially when our children approach puberty. Now that my son is six, I know that puberty is just around the corner and more information would be helpful.

I enjoyed receiving and reading CHILD Profile letters. It was a nice reminder for shots and checkups. I recall at least a couple occasions when the developmental/behavioral information couldn't have been more timely. I'm also a SIDS parent and really appreciate your support of the SIDS foundation.

Your letters really are a very important thing in our household because they are so helpful. The growth chart has been up in our daughter's room since the day she got it in the mail and still to this day. I think the chart was a very special thing to send to families, because every six months we measure her and she loves it. That's why I think the chart should be used until age 11 or 12. Thank you.

The CHILD Profile letters were an unexpected pleasure. It was great that someone was out there following along with my daughter's growth besides the family and doctor.

This is a wonderful service to parents; easy to read, direct, and it had good information. I hope it can continue as a service to others!

I really loved the information as well as gifts... I enjoyed the behavioral information very much and was always amazed at how timely you got the information to us according to our daughters' ages. Thank you! What fun.

Our daughter was a truncus (cardiac) baby, and I really appreciated the CHILD Profile letters helping me keep on track with normal health (immunization) issues. With such focus on her special needs, it was easy to let the normal things slide. And your letters made a real difference. Thank you.

I thought that this was very helpful. I moved around a lot and you still managed to find me and send me things. I say keep up the great work! New moms need all the help we can get. I was also very young when I had my son. So you did your part in helping me raise my son! Thank you.

(2 AND 3 ARE SURVEY TOOL AND LETTER)

Appendix 4

COMPARISON BETWEEN RESPONDENTS AND NON-RESPONDENTS USING BIRTH CERTIFICATE DATA

Introduction:

Birth certificate information was compared between respondents and non-respondents to the CHILD Profile Parent Survey to examine potential non-response bias. This analysis was undertaken to determine whether respondents to the Parent Survey were representative of the selected sample and whether there may have been potential response biases in the responses.

Non-response bias is a potential problem in any study where the subjects are able to decide whether to participate³. Respondents may be different from non-respondents in demographic distributions, health characteristics and/or behaviors⁴⁻⁹. Studies have shown that non-respondents are more likely to be less educated^{8,9}, older⁷⁻¹⁰, less healthy⁷, born in another country⁶, of a race other than white⁶, single^{5,6}, of lower social classes^{6,10}, and never employed^{5,6}. Non-response may also be a surrogate for less frequent use of health services². Conversely, other studies have shown that age⁶ or education¹⁰ may not be significantly different in non-respondents. Despite demographic and/or health differences, it is not clear whether these differences introduce bias in results, namely whether respondents answer questions differently from non-respondents⁴. Demographic differences between respondents and non-respondents may in fact exaggerate the differences in study population and the eligible population. As cited in the 1996 Parent Survey report, one study found similar results using non-responders' responses after re-surveying non-responders⁴.

Methodology:

Name and address information for the Parent Survey sample were provided by the CHILD Profile registry, using the demographic and date parameters assigned by the author. All birth certificate numbers from this entire sample were then given to the Washington State Center for Health Statistics to obtain specified birth certificate information for comparison. The birth certificate information was used to examine demographics, birth outcomes and various maternal behaviors (e.g., existence and amount of prenatal care, smoking during pregnancy). The methodology and study underwent Human Subjects Review at the Washington State Department of Health. A data sharing and confidentiality agreement also was signed to ensure confidentiality of the birth certificate information.

Results:

³ Lilienfield AM, Lilienfield DE. *Foundations of Epidemiology*. 1976;1980;202-04

⁴ Jackson R, Chambless LE et al. Differences between Respondents and Non-Respondents in a Multicenter Community-Based Study Vary by Gender and Ethnicity. *J Clin Epidemiol*. 1996;49:1441-46.

⁵ Shahar E, Folsom AR, Jackson R. The Effect of Non-Response on Prevalence Estimates for a Referent Population: Insights from a Population-Based Cohort Study. *Ann Epidemiol*. 1996;6:498-506.

⁶ Cartwright A. Who Responds to Postal Questionnaires. *J Epidemiol Community Health*. 1986;40:267-73.

⁷ Criqui MH, Barrett-Conner E, Austin M. Differences between Respondents and Non-Respondents in a Population-Based Cardiovascular Disease Study. *Am J Epidemiol*. 1978;108:368-72.

⁸ Comstock GW, Helsing KJ. Characteristics of Respondents and Non-Respondents to a Questionnaire for Estimating Community Mood. *Am J Epidemiol*. 1972;97:233-39.

⁹ Friedman GD, Cutter GR, Donahue RP et al. Cardia: Study Design, Recruitment and Some Characteristics of the Examined Subjects. *J Clin Epidemiol*. 1988;41:1105-16.

¹⁰ Sheikh K, Mattingly S. Investigating the Non-Response Bias in Mail Surveys. *J Epidemiol Community Health*. 1981;35:293-96.

Each of the three age groups (parents of six month olds, two year olds and six year olds) were analyzed separately to determine whether there were differences among groups. Please note that numbers (N) do not always add up to the totals due to incomplete birth certificate information.

Overall, comparing race/ethnicity data to the Center for Health Statistics' population estimates:

	Population estimates*		respondents	Non-respondents
	#	%		
White	50046	63%	82%	68%
African American	4764	6%	3%	7%
Native American	2254	3%	1%	2%
Asian	6622	8%	7%	8%
Hispanic	13052	16%	4%	10%
Other	73	0%	0%	0%
Unknown	2766	3%	3%	5%

*Source: Center for Health Statistics, Washington State Department of Health

Six month survey: Characteristics of respondents versus non-respondents, 1999

Variable	Non-Respondent		Respondent		Total
	# (total=1311)	%	# (total=1065)	%	2376
<i>Child race/ethnicity</i>					
White	848	65%	847	80%	1695
Black	78	6%	35	3%	113
Asian	65	5%	69	7%	134
Mexican/Hispanic	226	17%	56	5%	282
Amer Indian	32	2%	13	1%	45
Unknown	56	4%	38	4%	94
Other	5	.4%	7	.7%	12
<i>Mother education</i>					
9 years or less	135	10%	23	2%	158
10-11	149	18%	63	7%	212
Completed high school	381	29%	309	29%	690
Some college	320	24%	241	23%	561
Completed college	108	8%	200	19%	308
Graduate school	64	5%	139	13%	203
Unknown	154	12%	90	9%	244
<i>Mother married</i>	843	64%	843	79%	1686
<i># other children</i>					
0	503	38%	482	45%	985
1	396	30%	340	32%	736
2	212	16%	132	12%	344
3	99	8%	51	5%	150
4 or more	55	4%	38	4%	93
Unknown	42	3%	20	2%	62

<i>Month prenatal care began</i>					
1	215	16%	262	25%	477
2	443	34%	395	37%	838
3	254	19%	185	17%	439
4 or more	244	19%	135	13%	379
Unknown	146	11%	87	8%	233
<i># prenatal visits</i>					
5 or less	83	6%	23	2%	106
6 or 7	102	8%	56	5%	158
8 or 9	181	14%	119	11%	300
10-12	453	35%	432	41%	885
13+	309	24%	301	28%	610
Unknown	183	14%	134	13%	317
<i>Payment source</i>					
Medicaid	474	36%	203	19%	677
Self-pay	23	2%	14	1%	37
Commercial	335	26%	435	41%	770
HMO	216	17%	223	21%	439
Other	134	10%	109	10%	243
Not stated	61	5%	30	3%	91
Unknown	66	5%	50	5%	116
<i>Mom smoked in pregnancy</i>	199	15%	132	12%	331
<i>Benefit participation*</i>	599	46%	303	28%	902

*For prenatal care: Includes WIC, First Steps, LHJ and/or AFDC.

Two year survey: Characteristics of respondents versus non-respondents, 1999

Variable	Non-Respondent		Respondent		Total
	# (total=1034)	%	# (total=677)	%	1711
<i>Child race/ethnicity</i>					
White	708	69%	547	81%	1255
Black	82	8%	24	4%	106
Asian	99	10%	49	8%	154
Mexican/Hispanic	50	5%	11	2%	61
Amer Indian	11	1%	5	1%	16
Unknown	80	8%	39	6%	119
Other	4	-	2	-	6
<i>Mother education</i>					
9 years or less	35	3%	8	1%	43
10-11	71	7%	13	2%	84
Completed high school	247	24%	133	20%	380
Some college	247	24%	151	22%	398
Completed college	175	17%	179	26%	354

Graduate school	108	10%	121	18%	229
Unknown	151	15%	72	11%	223
<i>Mother married</i>	800	78%	603	89%	1403
<i># other children</i>					
0	411	40%	322	48%	733
1	333	32%	219	32%	552
2	148	14%	86	13%	234
3	59	6%	22	3%	81
4 or more	33	3%	10	1%	43
Unknown	50	5%	18	3%	68
<i>Month prenatal care began</i>					
1	254	25%	206	30%	460
2	365	35%	268	40%	633
3	156	15%	90	13%	246
4 or more	123	12%	35	5%	158
Unknown	136	13%	78	12%	214
<i># prenatal visits</i>					
5 or less	29	3%	15	2%	44
6 or 7	50	5%	23	3%	73
8 or 9	88	9%	41	6%	129
10-12	379	37%	250	37%	629
13+	314	30%	262	39%	576
Unknown	174	17%	86	13%	260
<i>Payment source</i>					
Medicaid	225	22%	63	9%	288
Self-pay	8	1%	5	1%	13
Commercial	335	32%	305	45%	640
HMO	195	19%	158	23%	353
Other	134	13%	71	11%	205
Not stated	98	10%	48	7%	146
Unknown	34	3%	25	4%	59
<i>Mom smoked in pregnancy</i>	116	11%	46	7%	162
<i>Benefit participation *</i>	302	29%	105	16%	407

Six year survey: Characteristics of respondents versus non-respondents, 1999

Variable	Non-Respondent		Respondent		Total
	# (total=653)	%	# (total=483)	%	1136
<i>Child race/ethnicity</i>					
White	470	72%	398	82%	868
Black	47	7%	12	3%	59
Asian	68	10%	34	7%	102
Mexican/Hispanic	33	5%	10	2%	43
Amer Indian	8	1%	4	1%	12
Unknown	26	4%	25	5%	51

Other	0		0		
<i>Mother education</i>					
9 years or less	23	4%	3	1%	26
10-11	50	8%	14	3%	64
Completed high school	173	26%	99	20%	272
Some college	181	28%	116	24%	297
Completed college	96	15%	118	24%	214
Graduate school	57	9%	85	18%	142
Unknown	73	11%	48	10%	121
<i>Mother married</i>	515	79%	430	89%	945
<i># other children</i>					
0	247	38%	232	48%	479
1	245	38%	157	33%	402
2	85	13%	56	12%	141
3	33	5%	20	4%	53
4 or more	30	5%	7	1%	37
Unknown	11	2%	11	2%	22
<i>Month prenatal care began</i>					
1	141	22%	145	30%	286
2	262	40%	189	39%	451
3	118	18%	85	18%	203
4 or more	79	12%	31	6%	110
Unknown	51	8%	33	7%	84
Total	651		483		1134
<i># prenatal visits</i>					
5 or less	23	4%	6	1%	29
6 or 7	18	3%	11	2%	29
8 or 9	48	7%		0%	48
10-12	232	36%	167	35%	399
13+	248	38%	245	51%	493
Unknown	84	13%	54	11%	138
<i>Payment source</i>					
Medicaid	180	28%	48	10%	228
Self-pay	16	3%	15	3%	31
Commercial	254	39%	219	45%	473
HMO	120	18%	126	26%	246
Other	52	8%	28	6%	80
Not stated	24	4%	41	9%	65
Unknown	6	1%	6	1%	12
<i>Mom smoked in pregnancy</i>	108	17%	39	8%	147
<i>Benefit participation</i>	159	24%	56	12%	215

Discussion:

Some differences were observed between respondents and non-respondents. As has been recorded in the previous parent survey report and in other studies in the literature, survey respondents tend to be older, white, with higher

education and income levels. This finding is true in this CHILD Profile Parent Survey as well. Additionally, there were some variations among the different survey populations. It should be noted that the birth certificate respondent data does not perfectly match survey respondent data. This is probably due to the fact that respondent self-reporting is often different from provider reporting on the birth certificate.

Overall, respondents were more likely to be White, to have finished college or graduate school, to have only one child and to have begun prenatal care in the first month. Respondents were also less likely to have used Medicaid for prenatal care payments and less likely to participate in State programs (AFDC, WIC, First Steps or local health jurisdiction services). However, no differences were observed in date of last birth for those with more than one child, infant birthweight, whether the mother drank during pregnancy, number of alcoholic drinks per week, maternal medical risk factors, or newborn abnormal conditions.

While there were some differences detected, it is still unclear whether non-respondents would have answered the survey questions differently. To create more representative samples in future surveys, it might be useful to oversample parents with lower income or education levels and those who are non-white.